

REMARKS

Claims 3, 4 and 6-15 are pending. No new matter has been added by way of the present submission. For instance, claims 1, 2 and 5 have been cancelled. Claim 3 has been amended to include textual subject matter taken from originally filed claim 1. New claim 6 is supported by originally filed claim 2. New claims 7, 8, 11 and 12 are supported by the present specification at page 4, lines 6-8. New claims 9 and 14 are supported by the present specification at page 6, line 31 to page 37, line 1. New claim 13 is supported by originally filed claim 3. Lastly, new claims 10 and 15 are supported by the present specification at page 8, lines 6-14. Accordingly, no new matter has been added.

In view of the following remarks, the Examiner is respectfully requested to withdraw all rejections and allow the currently pending claims.

Issue under 35 U.S.C. § 101

The Examiner has rejected claim 5 under 35 U.S.C. § 101. Applicants traverse and submit that claim 5 has been cancelled. Thus, this issue is moot. Reconsideration and withdrawal thereof are respectfully requested.

Issue under 35 U.S.C. § 112, second paragraph

The Examiner has rejected claim 5 under 35 U.S.C. § 112, second paragraph. Applicants traverse and submit that claim 5 has been cancelled. Thus, this issue is moot. Reconsideration and withdrawal thereof are respectfully requested.

Issues under 35 U.S.C. § 102(b)

The Examiner has rejected claims 1 and 2 under 35 U.S.C. § 102(b) as being anticipated by JP 58-017816A (hereinafter referred to as JP '816).

The Examiner has also rejected claims 1 and 2 under 35 U.S.C. § 102(e) as being anticipated by Butters et al., U.S. Patent Application Publication No. 2004/0129175 (hereinafter referred to as Butters '175).

The Examiner has also rejected claims 1 and 2 under 35 U.S.C. § 102(b) as being anticipated by Lin, U.S. Patent No. 5,518,980 (hereinafter referred to as Lin '980).

Applicants respectfully traverse each of the above rejections.

Claims 1 and 2 have been cancelled. Thus, each of the above anticipation rejections based upon JP '816, Butters '175 or Lin '980 is moot. The Examiner is thus requested to withdraw these rejections.

Issues under 35 U.S.C. § 103(a)

The Present Invention and its Advantages

Independent claim 3 relates to a cement composition comprising 100 parts by weight of a cement and 0.05 to 10 parts by weight of calcium hydroxide particles having an average particle diameter of 3  $\mu\text{m}$  or less as a cement setting accelerator.

Independent claim 4 is directed to a process for manufacturing a cement composition comprising adding a water slurry of calcium hydroxide particles having an average particle diameter of 3  $\mu\text{m}$  or less to a cement.

Due to the fact that the cement composition of claim 3 comprises very fine calcium hydroxide particles (average particle diameter of 3  $\mu\text{m}$  or less), unexpectedly superior results are obtained by the present invention. For instance, a remarkable effect of significantly shortening the setting times is obtained (see page 4, lines 9-11 and page 10, Table 1 of the present specification) by the present invention. More specifically, as is evident from a comparison between Examples 1-3 and Comparative Examples 2-5 of Table 1, when the particle diameter of the calcium hydroxide particles in use is larger than 3  $\mu\text{m}$ , the initial and final setting times become quite long.

1. JP '661 in view of Lin '980

The Examiner has rejected claims 3 and 4 under 35 U.S.C. § 103(a) as being obvious over JP 2001-233661A (hereinafter referred as JP '661) in view of Lin '980. Applicants respectfully traverse this rejection.

Distinctions between the Present Invention and JP '661 and Lin '980

JP '661 discloses a dry cement concrete including a hydroxide, such as calcium hydroxide, in an amount of 0.3 – 1% mass per 100% mass of cement.

However, JP '661 fails to disclose the particle diameter of the calcium hydroxide in use.

Lin '980 teaches a calcium hydroxide slurry having an average primary particle size of about 0.05 to about 5.0  $\mu\text{m}$  (see column 5, lines 39-14). However, the calcium hydroxide is used as an sulfur oxide (SOx)-reducing agent in the composition of Lin '980 (see column 4, lines 59-61). Further, Lin '980 fails to disclose that calcium hydroxide having an average particle size of about 0.05 to about 5.0  $\mu\text{m}$  should or could serve as a cement setting accelerator.

Applicants submit that there exists no motivation to combine JP '661 with Lin '980. For instance, JP '661 fails to disclose the specific requirements of the calcium hydroxide. And, even though Lin '980 discloses calcium hydroxide particles having an average primary particle size of about 0.05 to about 5.0  $\mu\text{m}$ , there is simply no motivation provided to modify JP '661 with the teachings of Lin '980. JP '661 is interested in a dry cement concrete, whereas Lin '980 is interested in removal of sulfur oxides from combustion effluents through in-furnace injection of stabilizing slurries of calcium carbonate, calcium oxide and calcium hydroxide. These two fields of interest are too unrelated to provide any motivation to those of skill in the art to combine any teachings, much less the specific teachings mentioned above. Thus, no *prima facie* case of obviousness exists.

Further, even if these references are combined together, a point not conceded, they still fail to suggest the present invention achieving excellent setting properties as described above and as obtained using calcium hydroxide having an average particle diameter of 3  $\mu\text{m}$  or less. Such results are completely unexpected and thus render of any hypothetical *prima facie* case of obviousness moot.

Therefore, claims 3 and 4 of the present application are not obvious over JP '661 in view of Lin '980.

2. Kikuchi '523 in view of Lin '980

The Examiner has also rejected claims 3 and 4 under 35 U.S.C. § 103(a) as being obvious over Kikuchi et al., U.S. Patent No. 4,650,523 (hereinafter referred to as Kikuchi '523) in view of Lin '980. Applicants respectfully traverse this rejection.

Kikuchi '523 teaches a cement accelerating element comprising calcined alumite, a carbonate and lime. However, Kikuchi '523 fails to disclose or suggest the particle size of the lime. The Examiner again attempts to cure this deficiency with Lin '980. However, reliance upon Lin '980 is similarly improper as discussed above with respect to the combination of JP '661 and Lin '980. This rejection is likewise improper and should be withdrawn since there exists no *prima facie* case of obviousness and unexpectedly superior properties exist.

3. Simeonov '998

Lastly, the Examiner has rejected claims 3 and 4 under 35 U.S.C. § 103(a) as claimed obvious over Simeonov et al., U.S. Patent No. 4,205,998 (hereinafter referred to as Simeonov '998) in view of Lin '980.

Simeonov '998 discloses a cement accelerating agent comprising calcium oxide in the form of hydrated lime. The mixture is added to a cement composition. However, similar to the above two references of JP '661 and Kikuchi '523, Simeonov '998 fails to disclose or suggest the particle size of the calcium hydroxide. The Examiner again attempts to rely on Lin '980. However, such a combination is improper for the same reasons discussed above. This rejection is thus likewise improper and should be withdrawn.

Unexpected Superior Results

Applicants have shown above that there exist no *prima facie* cases of obviousness based upon any of JP '661, Kikuchi '523, Simeonov '998 or Lin '980, regardless of the combination. Applicants now stress that even if the Examiner has hypothetically presented valid *prima facie*

cases of obviousness, a point not conceded, the present invention still achieves unexpectedly superior results compared with the prior art. As discussed above with reference to the present Examples and Comparative Examples, it is evident that the present invention achieves superior setting times for examples 1-3 compared to comparative examples 2-5 as shown in Table 1 at page 10 of the specification. Such results are unexpected. Thus, any hypothetical *prima facie* case of obviousness is moot.

In view of the above, Applicants respectfully submit that the present claims are in condition for allowance. The Examiner is thus requested to withdraw all rejections and allow the currently pending claims.

If the Examiner has any questions or comments, please contact Craig A. McRobbie, Reg. No. 42,874 at the offices of Birch, Stewart, Kolasch & Birch, LLP at the number provided below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to our Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under § 1.17; particularly, extension of time fees.

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Respectfully submitted,

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